

nanoGPS navYX™ – HORIBAs collaborative and inter-instrumental solution for correlative microscopy

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A comprehensive characterization of geological or mineralogical samples requires the application of more than one method to combine their complementary strengths. For example, the synergetic combination of μ -XRF (or SEM-EDX) with Raman microscopy provides information on both, the element composition as well as phase and structural properties of a specimen. However, relocation of points of interest (POI) on a μ m-scale is one of the most tedious and time-consuming issue if the specimen is transferred between various instruments, especially if the imaging technique strongly differs (e.g., SEM vs. light microscopic image). Here, we present HORIBAs nanoGPS navYX™ technology that provides a unique solution to this problem and is independent from the respective instrument or manufacturer (Acher et al. 2021). Typical requirements to successfully apply this technique include the option for microscopic imaging or visualization (min. 2x to 5x magnification) and software-controlled, motorized sample stage positioning. Nearly all types of microscopy techniques, such as SEM, μ -XRF, AFM, Raman or light microscopy, hence, may be correlated using nanoGPS navYX™. To do so, a small relocation tag with a patented reading pattern is attached to the sample. This tag defines a virtual coordination system that is read by the dedicated navYX™ software and saves all points and measurement sites of interest. On every calibrated instrument, the saved POIs may be easily relocated independently of sample positioning or rotation via direct conversion of the virtual nanoGPS coordinates into the instrument's stage coordinates.



Acher O, Nguyễn T L, Podzorov A, Leroy M., Carles P A, Legendre S (2021): An efficient solution for correlative microscopy and co-localized observations based on multiscale multimodal machine-readable nanoGPS tags. - Meas Sci Technol 32(4) 045402